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(12) United States Patent
Jepson et al.**(10) Patent No.: US 6,344,033 B1**
(45) Date of Patent: *Feb. 5, 2002**(54) NEEDLELESS CONNECTOR****(75) Inventors:** Steven C. Jepson; Thomas E. Dudar, both of Palatine; Rodrigo A. Montanez, Waukegan; Algirdas J. Bindokas, Clarendon Hills; Michael J. Finley, Wilmot; Jason J. White, Chicago; Camille Summer, Crystal Lake; Samuel Ding, Vernon Hills; Lewis E. Daniels, Wonder Lake, all of IL (US)

3,974,832 A	8/1976	Kruck
3,976,063 A	8/1976	Hennemann et al.
3,977,400 A	8/1976	Moorehead
3,977,403 A	8/1976	Patel
3,986,508 A	10/1976	Barrington
3,994,293 A	11/1976	Ferro
3,994,516 A	11/1976	Fredd
4,000,739 A	1/1977	Stevens
4,006,744 A	2/1977	Steer
4,019,512 A	4/1977	Tenczar
4,040,421 A	8/1977	Young
4,063,555 A	12/1977	Ullinder
4,076,285 A	2/1978	Martinez

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(List continued on next page.)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

FOREIGN PATENT DOCUMENTS

CA	2083670	5/1993
DE	2907-832	9/1980
DE	30 31 242 A1	3/1982
DE	30 42 229 A1	5/1982
DE	32 42 870 A1	6/1983
DE	33 03 718 C1	10/1984

(List continued on next page.)

(21) Appl. No.: 09/370,864**(22) Filed: Aug. 9, 1999****Related U.S. Application Data****(63)** Continuation of application No. 09/081,728, filed on May 20, 1998, now Pat. No. 5,957,898.
(60) Provisional application No. 60/047,161, filed on May 20, 1997.**(51) Int. Cl.⁷ A61M 5/00****(52) U.S. Cl. 604/256; 604/533; 128/912****(58) Field of Search 604/246, 167, 604/201, 203, 236, 237, 244-256, 523, 533, 534, 535, 538, 539; 128/912****(56) References Cited****U.S. PATENT DOCUMENTS**

2,950,257 A	8/1960	Hibbs et al.
3,898,988 A	8/1975	Morgan
3,968,508 A	7/1976	Ikeuchi

Primary Examiner—Sharon Kennedy**(74) Attorney, Agent, or Firm**—Jeffrey C. Nichols; Mark J. Buonaiuto; Francis C. Kowalik**(57) ABSTRACT**

A needleless connector is provided which utilizes a resealable preslit septum valve. The valve is resiliently restrained relative to a housing with the valve and housing configured to accept a standard male luer lock having a luer tip which penetrates the valve through the opening to extend within the housing and a luer locking flange of the luer lock extending about the housing. The valve includes a disk shaped upper portion covering the opening, a lower portion spaced from the housing and extending downward from the disk shaped portion into a passageway defined by the housing, and an annular skirt to attach the septum to the housing. The connector exhibits satisfactory leak pressure after multiple connections and disconnects to the luer lock fitting and long periods of indwell of the luer tip.

14 Claims, 14 Drawing Sheets